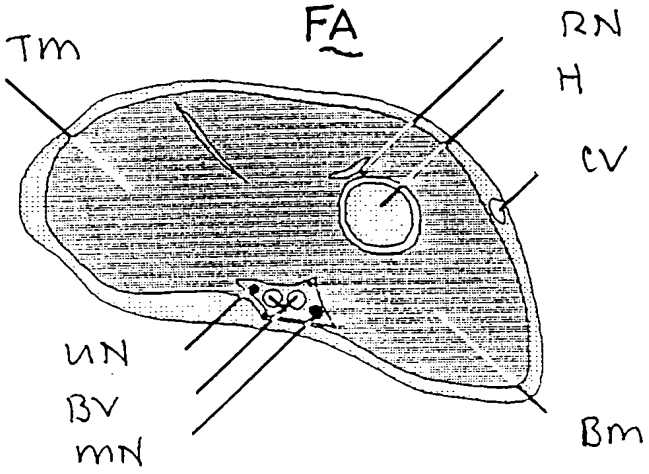

FIGURE 1

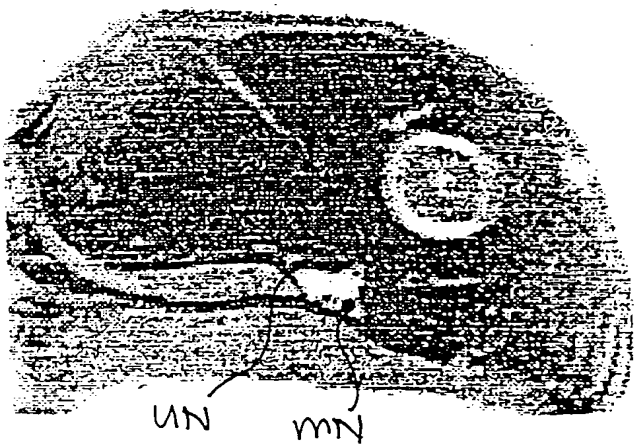

FIGURE 12

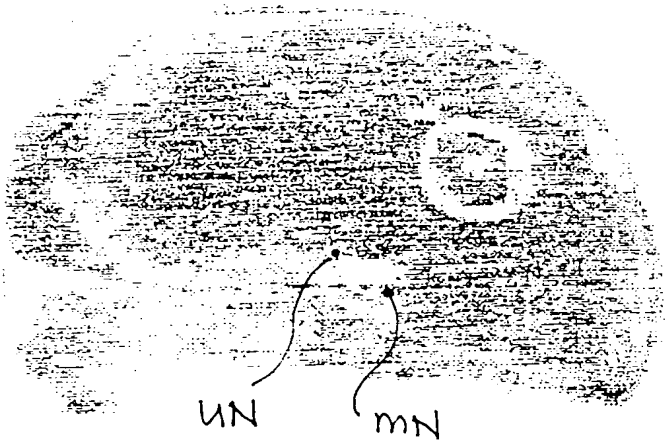

FIGURE 13A

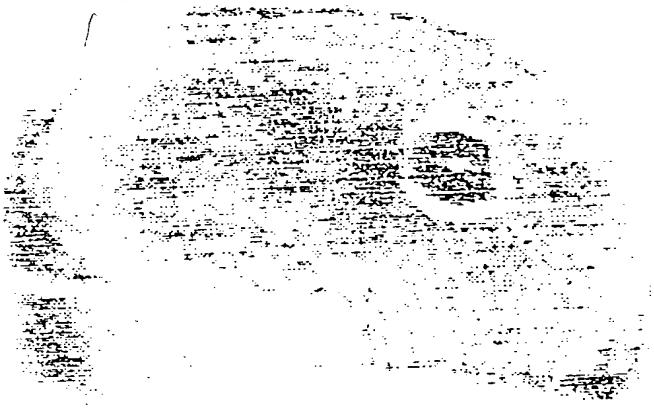

FIGURE 13B

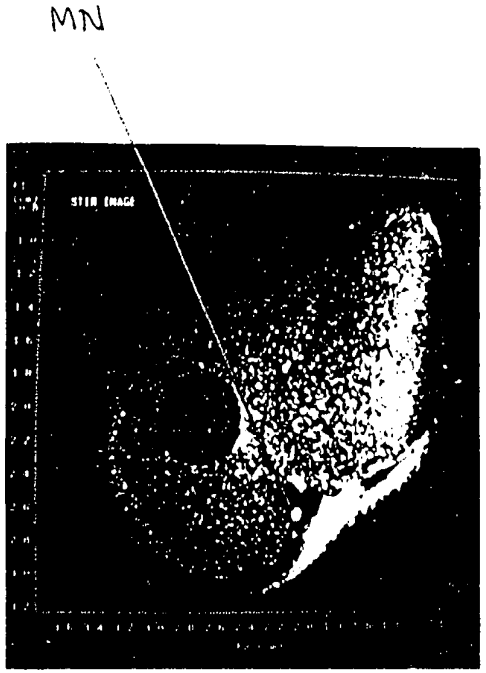

FIGURE 3

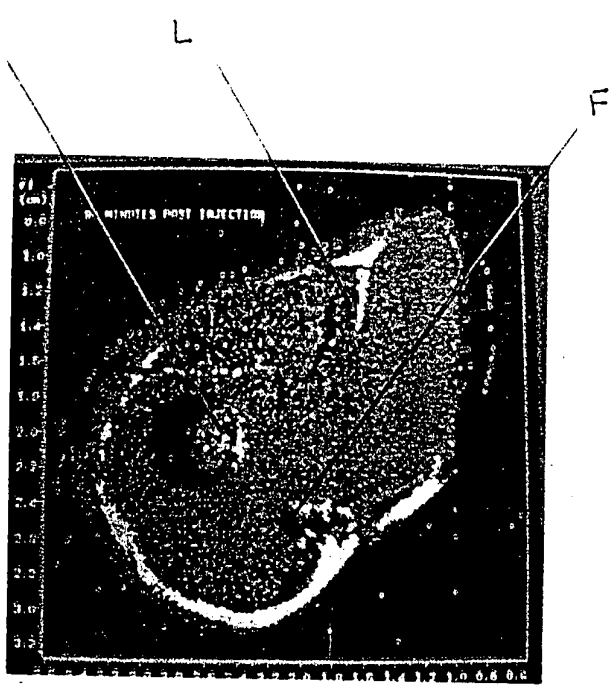

FIGURE 2A

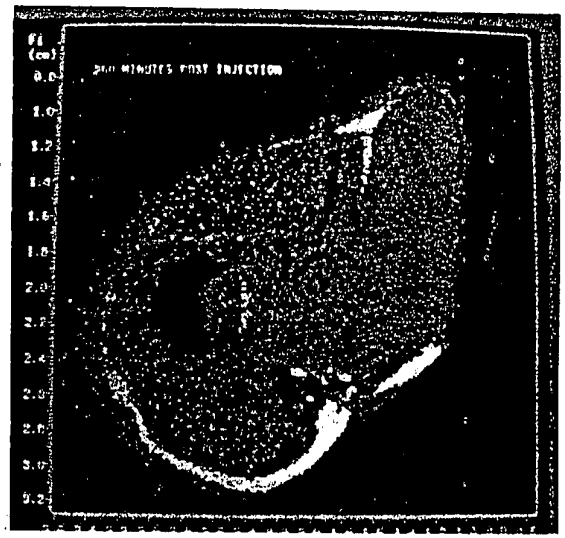

FIGURE 2B

FIGURE 4

FIGURE 5A

FIGURE 5B

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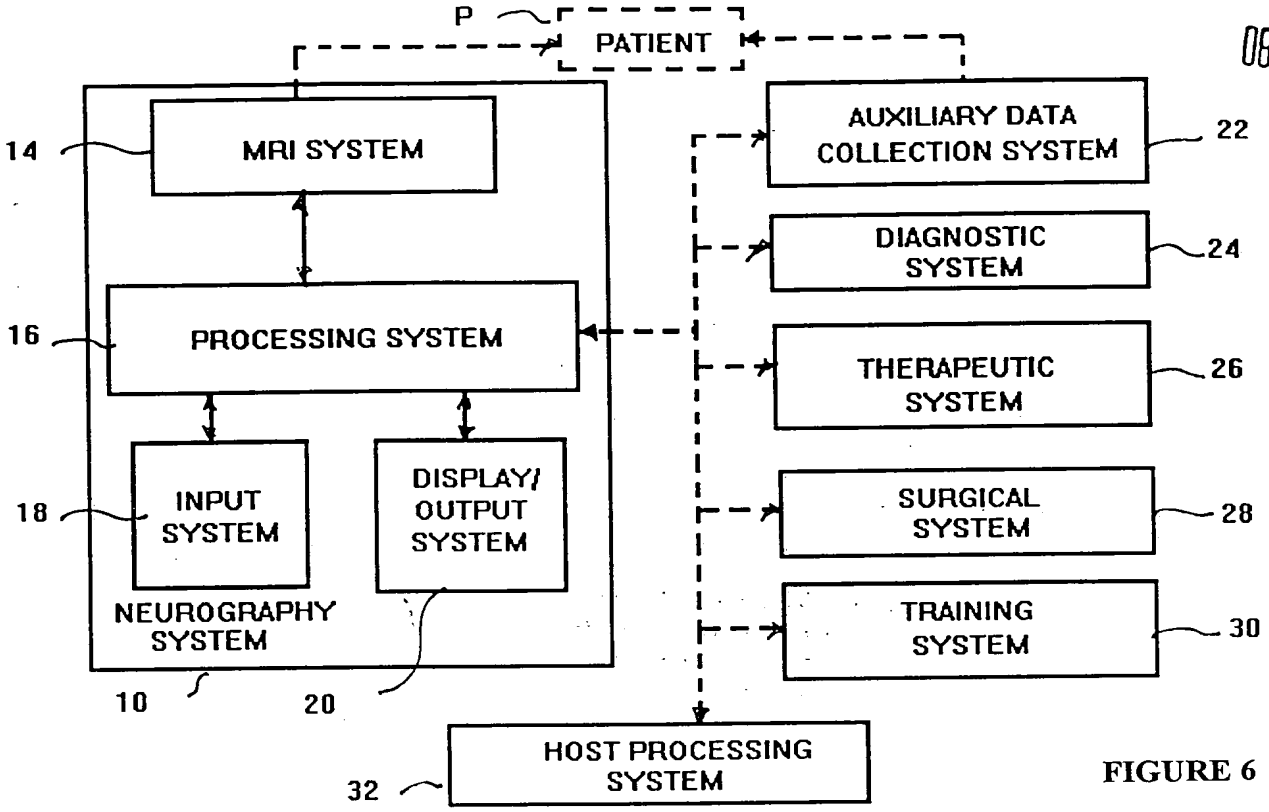
P
PATIENT
14
MRI SYSTEM
16
PROCESSING SYSTEM
18
INPUT SYSTEM
DISPLAY/ OUTPUT SYSTEM
NEUROGRAPHY SYSTEM
10
20
AUXILIARY DATA COLLECTION SYSTEM
22
DIAGNOSTIC SYSTEM
24
THERAPEUTIC SYSTEM
26
SURGICAL SYSTEM
28
TRAINING SYSTEM
30
HOST PROCESSING SYSTEM
32

FIGURE 6

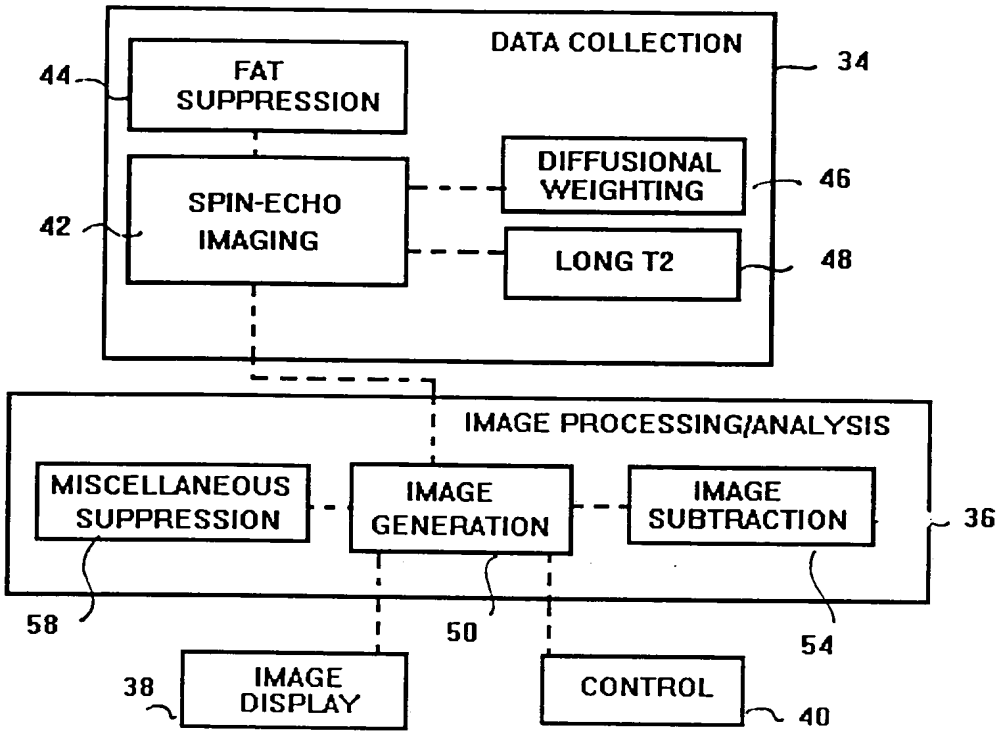
DATA COLLECTION
34
44
FAT SUPPRESSION
42
SPIN-ECHO IMAGING
DIFFUSIONAL WEIGHTING
46
LONG T2
48
IMAGE PROCESSING/ANALYSIS
MISCELLANEOUS SUPPRESSION
IMAGE GENERATION
IMAGE SUBTRACTION
36
58
50
54
38
IMAGE DISPLAY
CONTROL
40

FIGURE 7

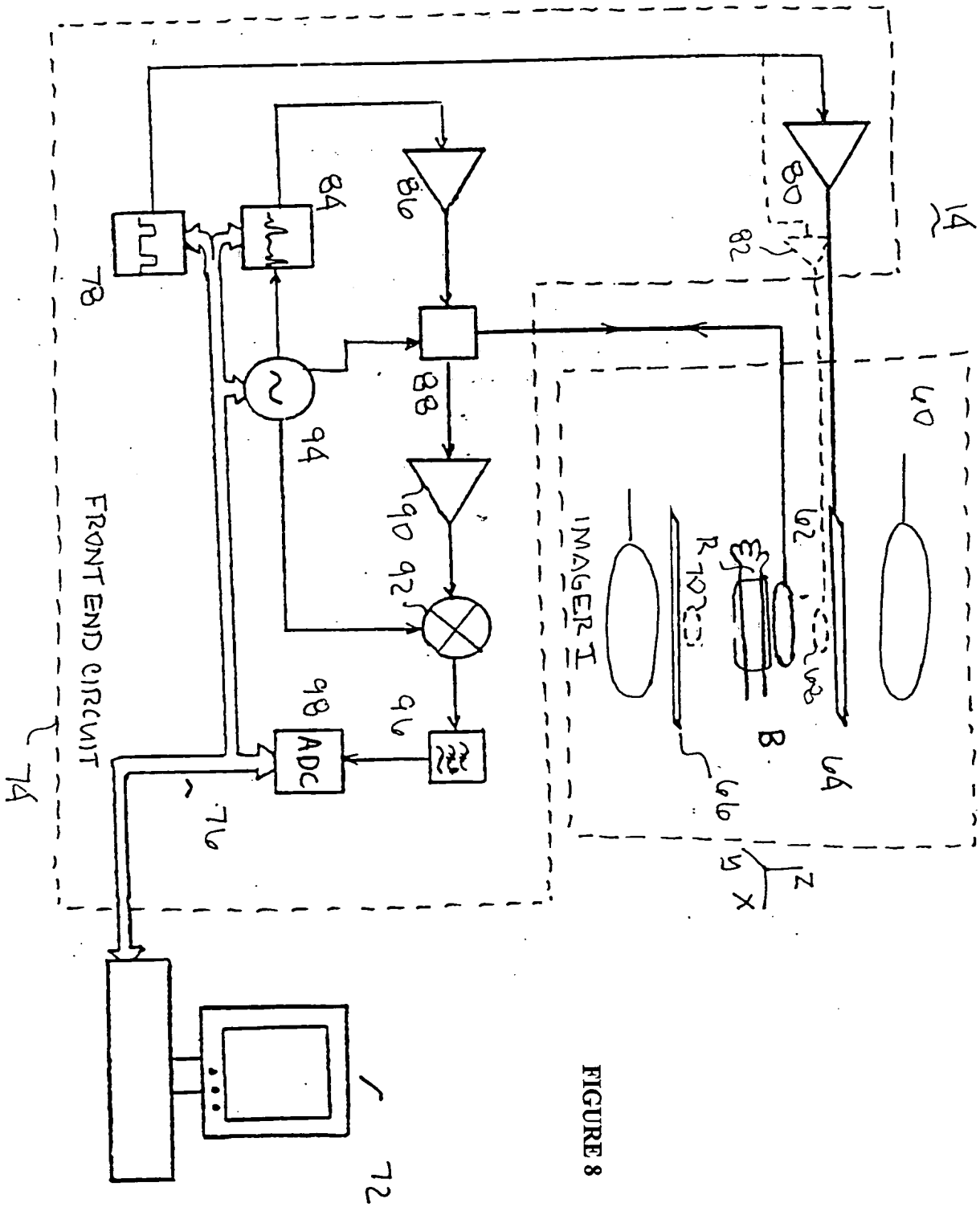
14
80
82
84
86
88
90
92
94
96
98
ADC
78
74
76
FRONT END CIRCUIT
IMAGER I
40
62
64
66
B
R
72
Z
Y
X

FIGURE 8

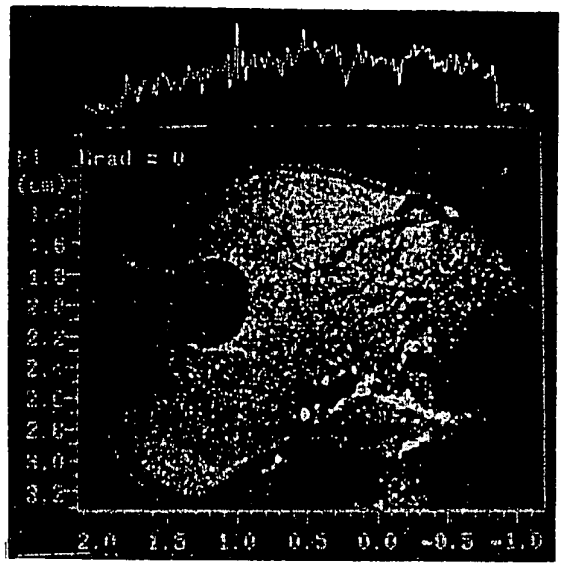

FIGURE 14A

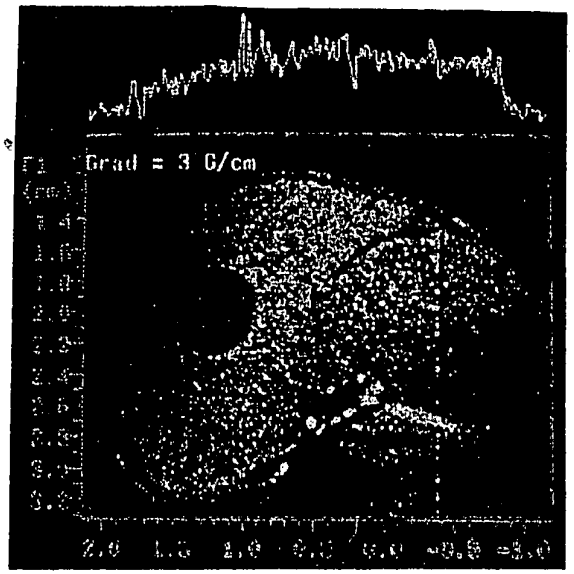

FIGURE 14B

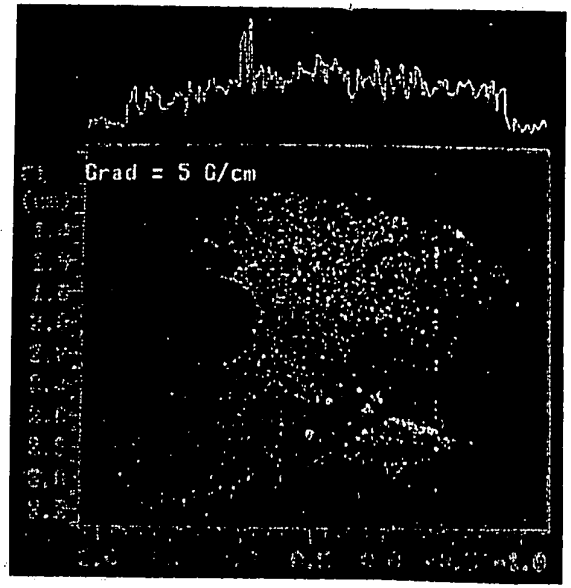

FIGURE 14C

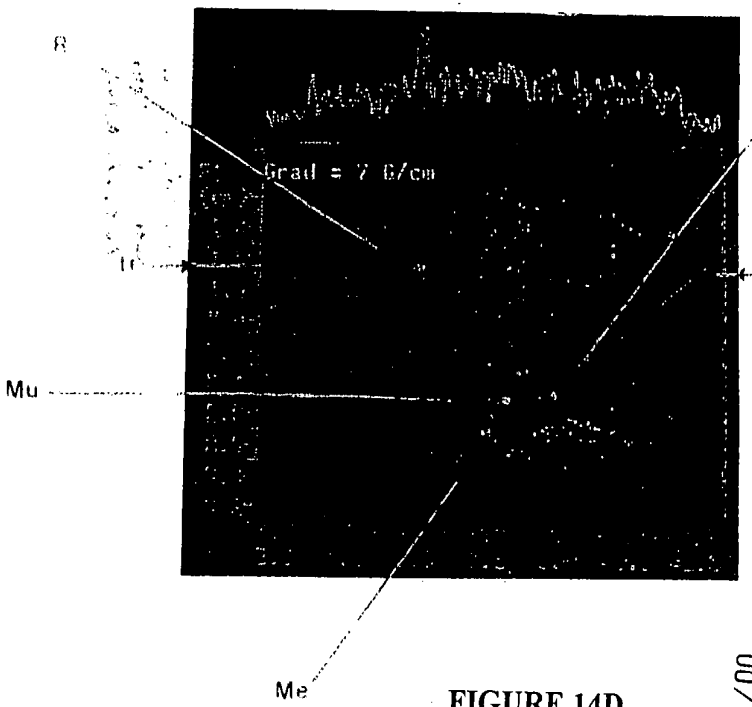

FIGURE 14D

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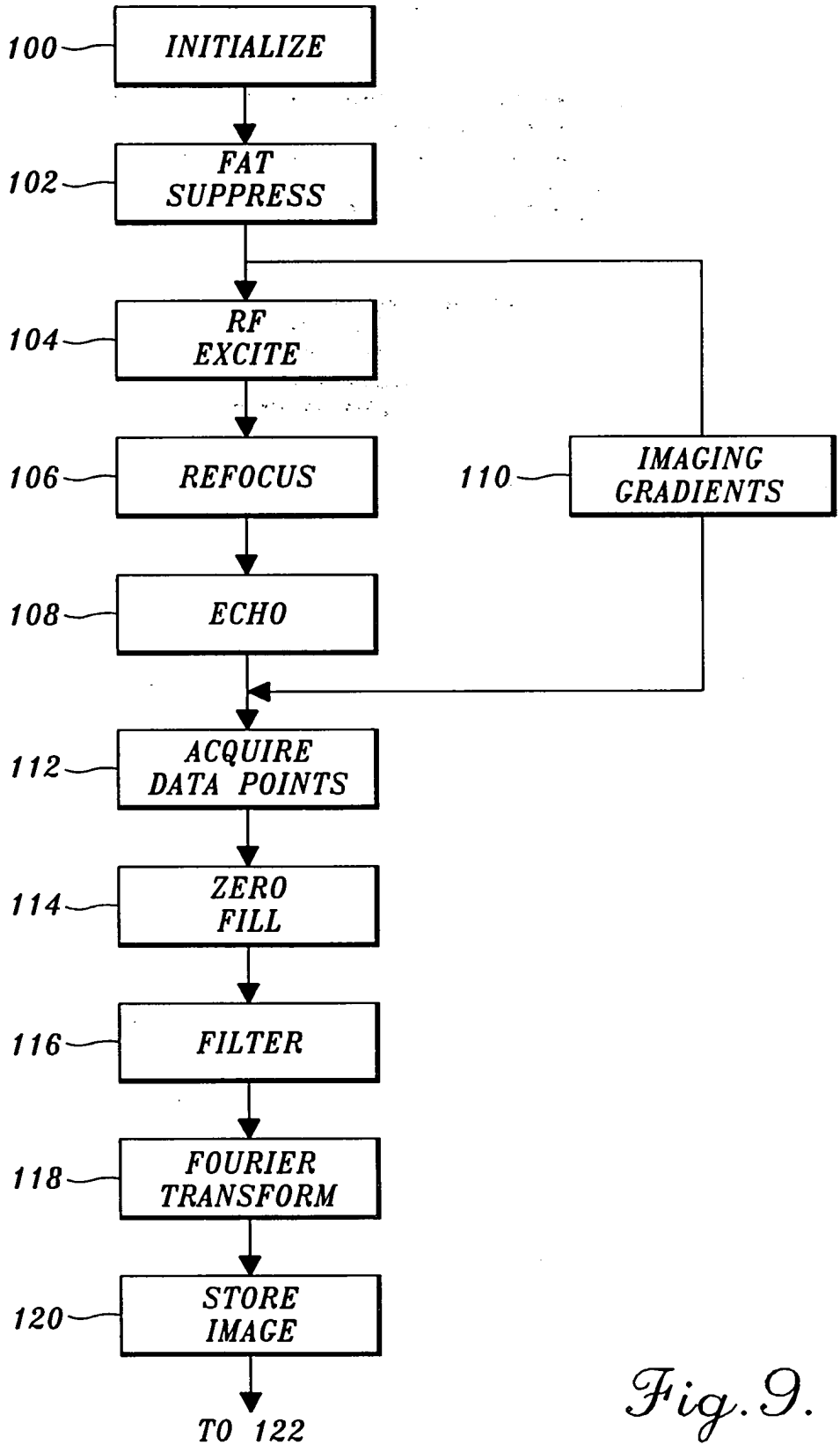
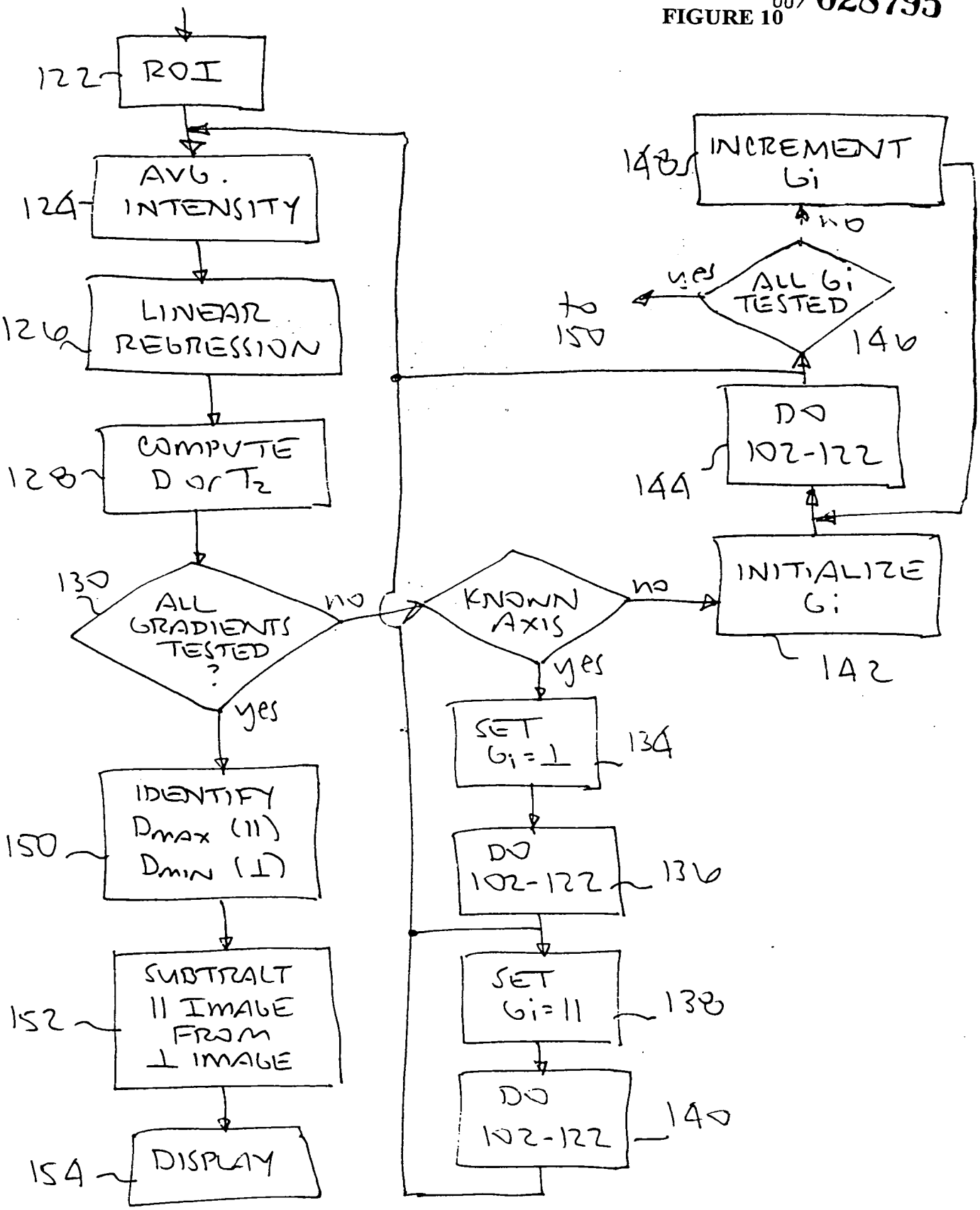

100
INITIALIZE
102
FAT SUPPRESS
104
RF EXCITE
106
REFOCUS
110
IMAGING GRADIENTS
108
ECHO
112
ACQUIRE DATA POINTS
114
ZERO FILL
116
FILTER
118
FOURIER TRANSFORM
120
STORE IMAGE
TO 122

Fig. 9.

FIGURE 10


FROM 120
122
ROI
124
AVG. INTENSITY
126
LINEAR REGRESSION
128
COMPUTE D or T_2
130
ALL GRADIENTS TESTED ?
no
yes
150
IDENTIFY D_{MAX} (11) D_{MIN} (⊥)
152
SUBTRACT 11 IMAGE FROM ⊥ IMAGE
154
DISPLAY
KNOWN AXIS
no
yes
INITIALIZE Gi
142
SET Gi = ⊥
134
DO 102-122
136
SET Gi = 11
138
DO 102-122
140
INCREMENT Gi
148
no
yes
to 150
ALL Gi TESTED
146
DO 102-122
144

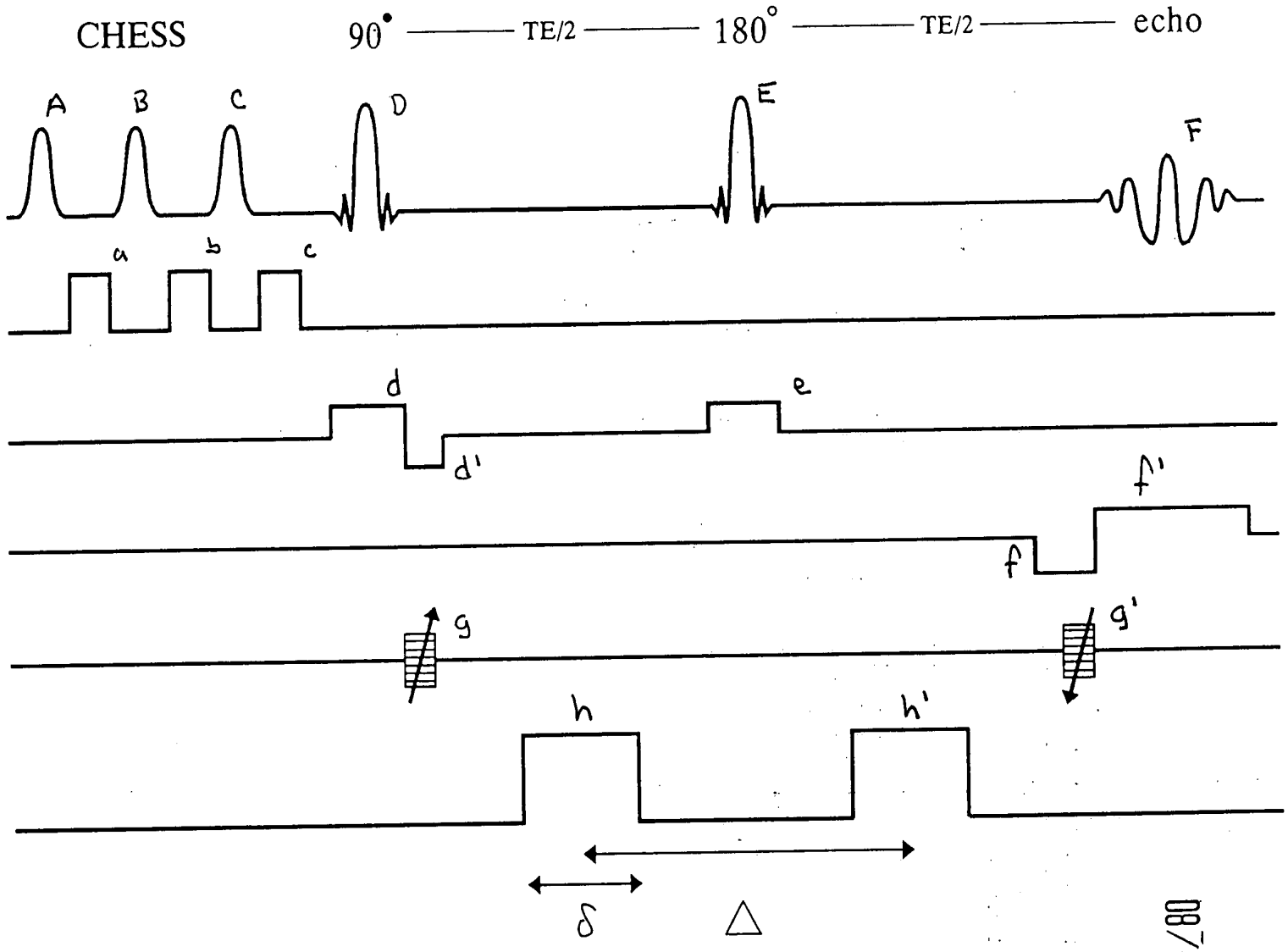


FIGURE 11A
RF

FIGURE 11B
Dephasing gradients

FIGURE 11C
Slice select

FIGURE 11D
Readout gradient

FIGURE 11E
Phase encoding

FIGURE 11F
Diffusion weighting

08/028,793

Spin Echo Images

te = 30ms

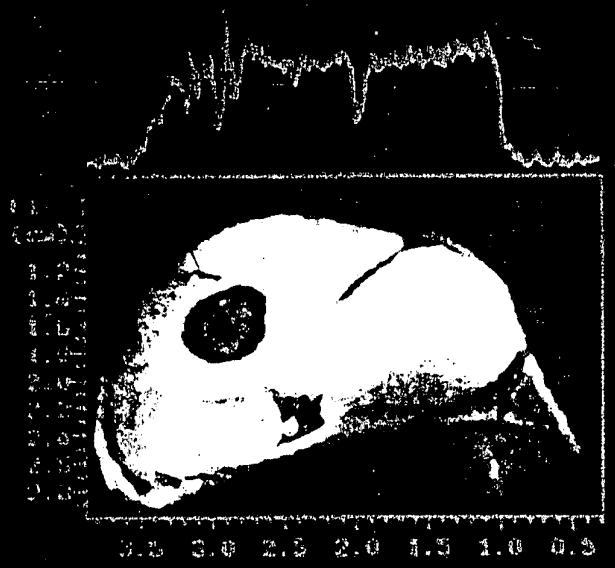


FIGURE 18A

te = 40ms

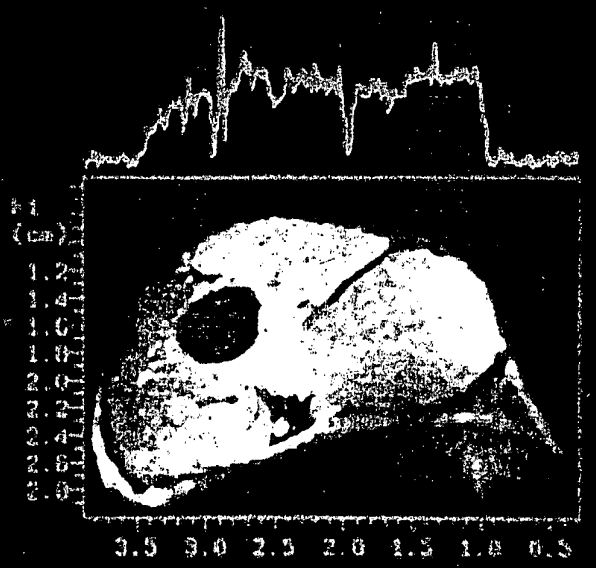


FIGURE 18B

te = 60ms

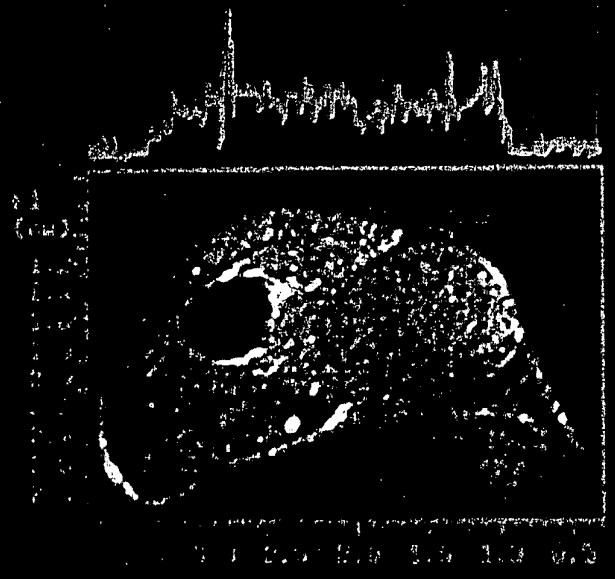


FIGURE 18C

te = 100ms

trace

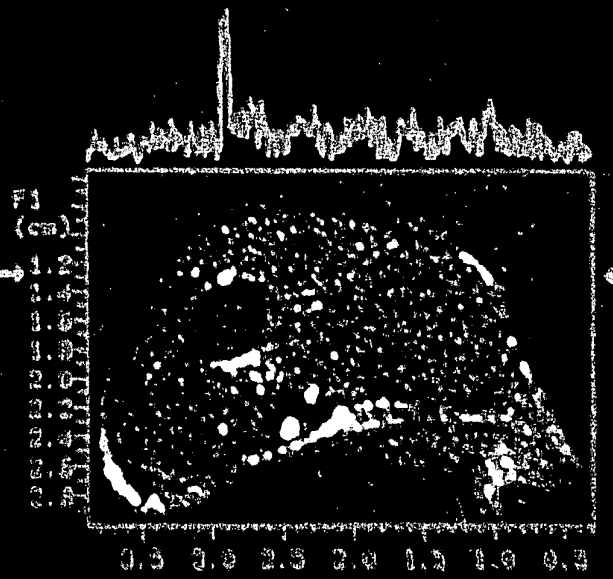


FIGURE 18D

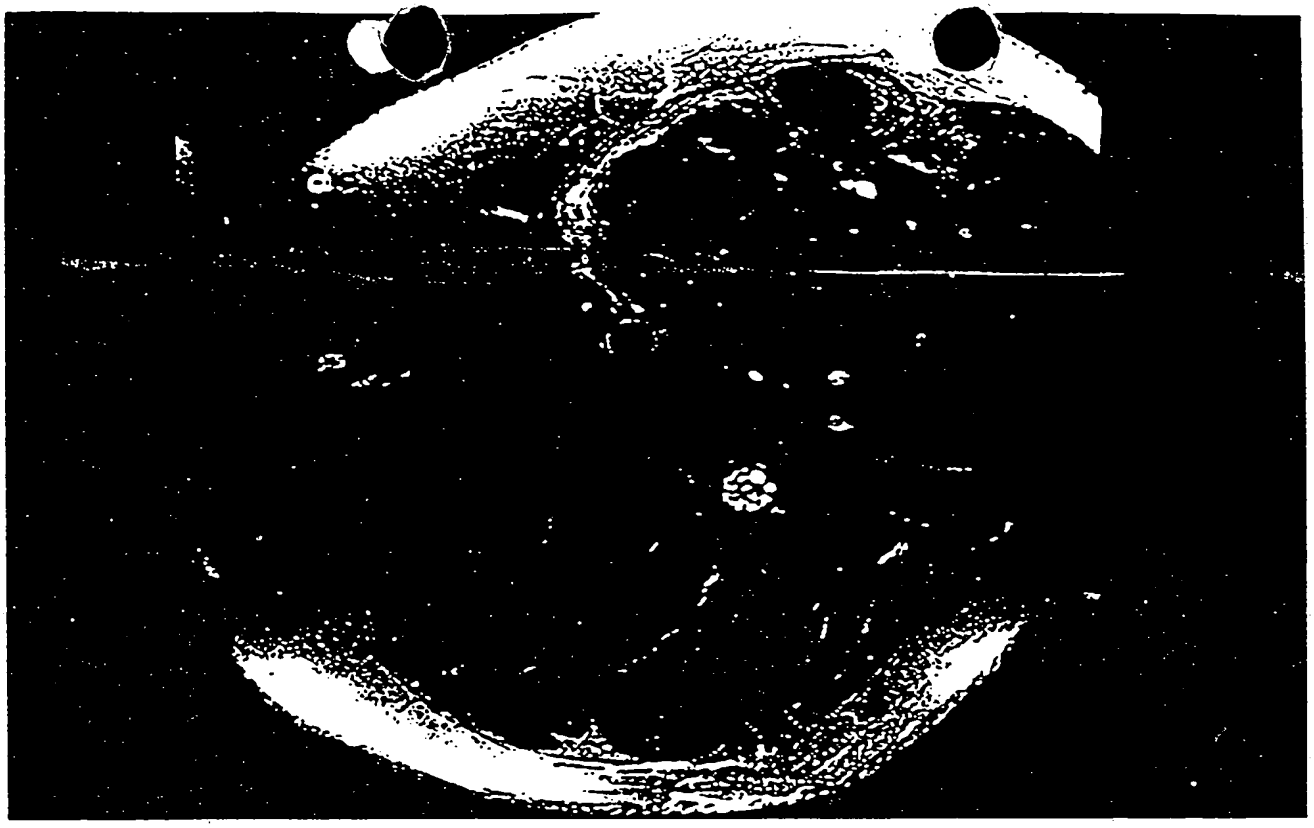


FIGURE 20

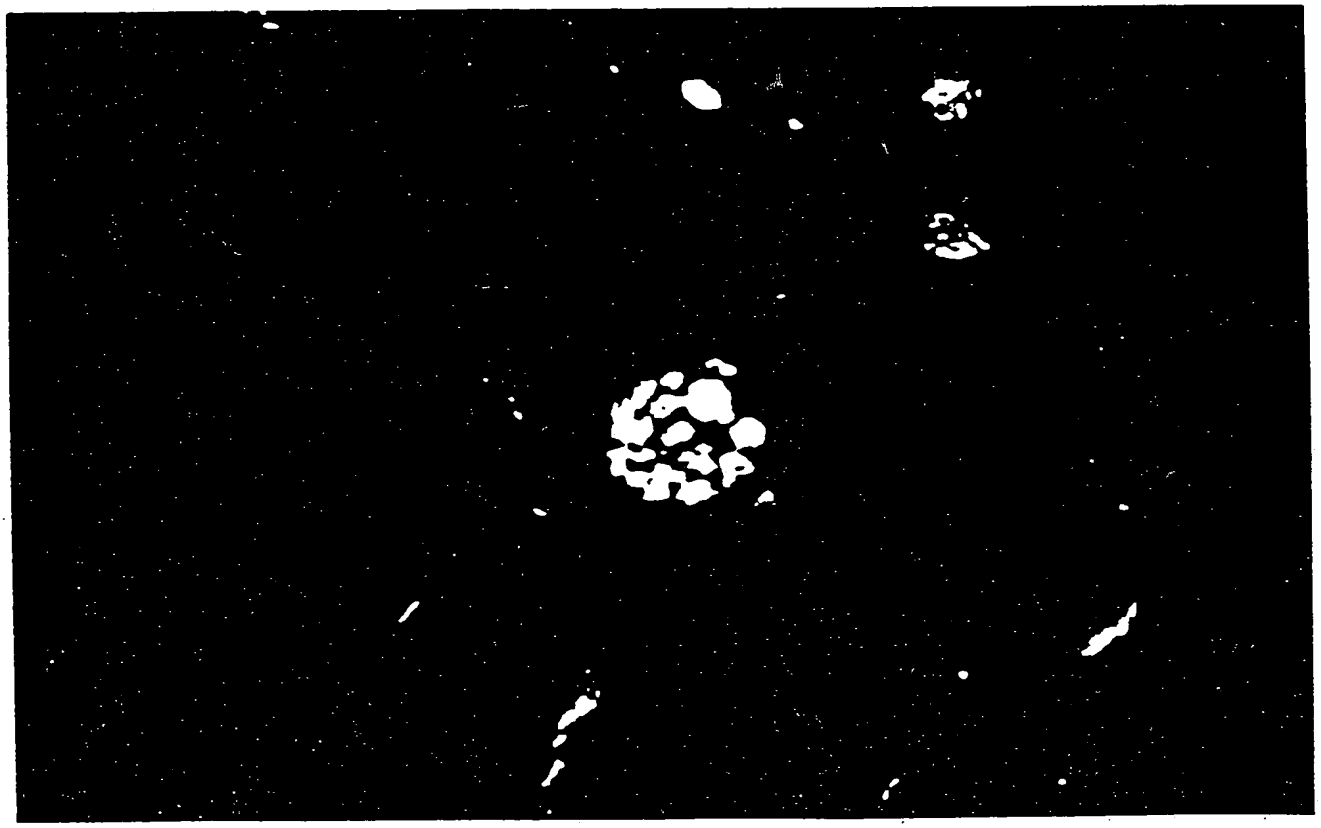


FIGURE 21

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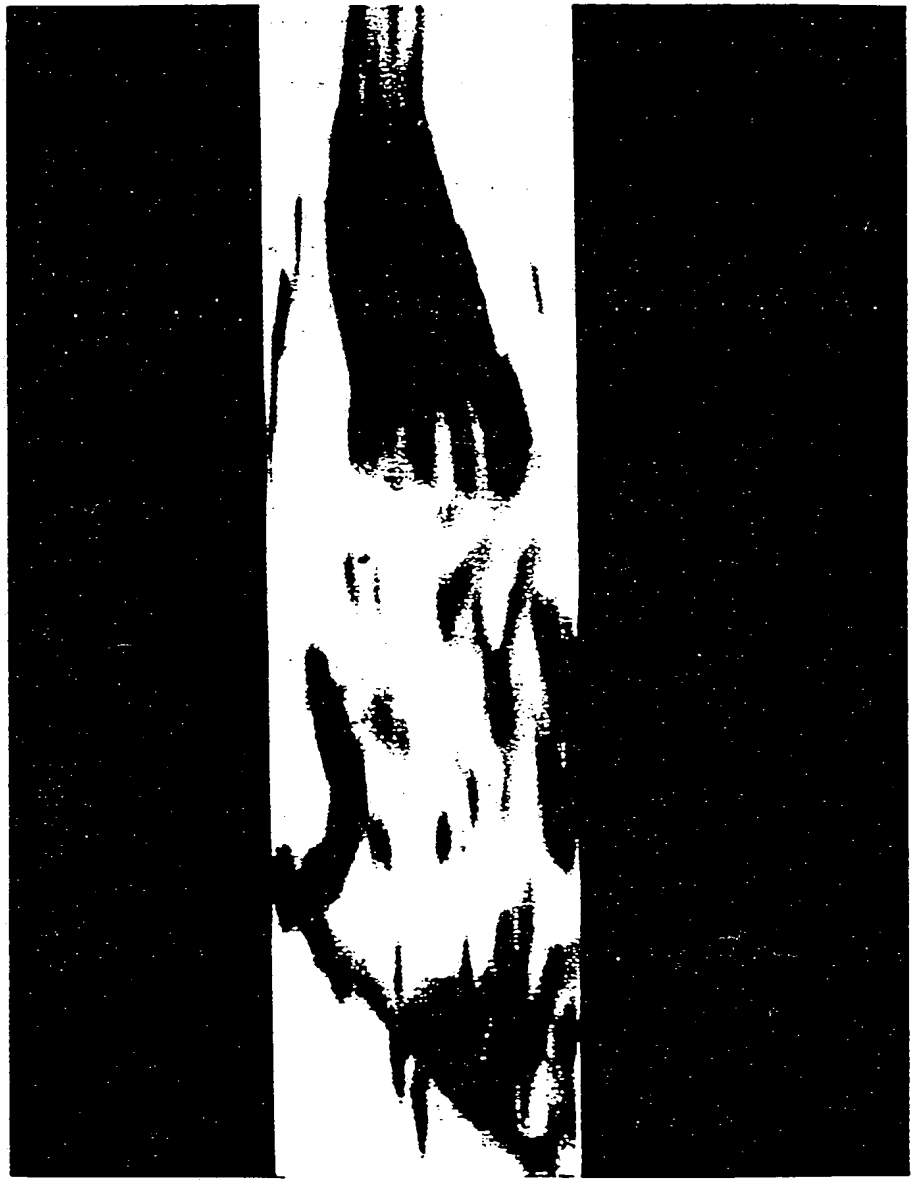

FIGURE 22

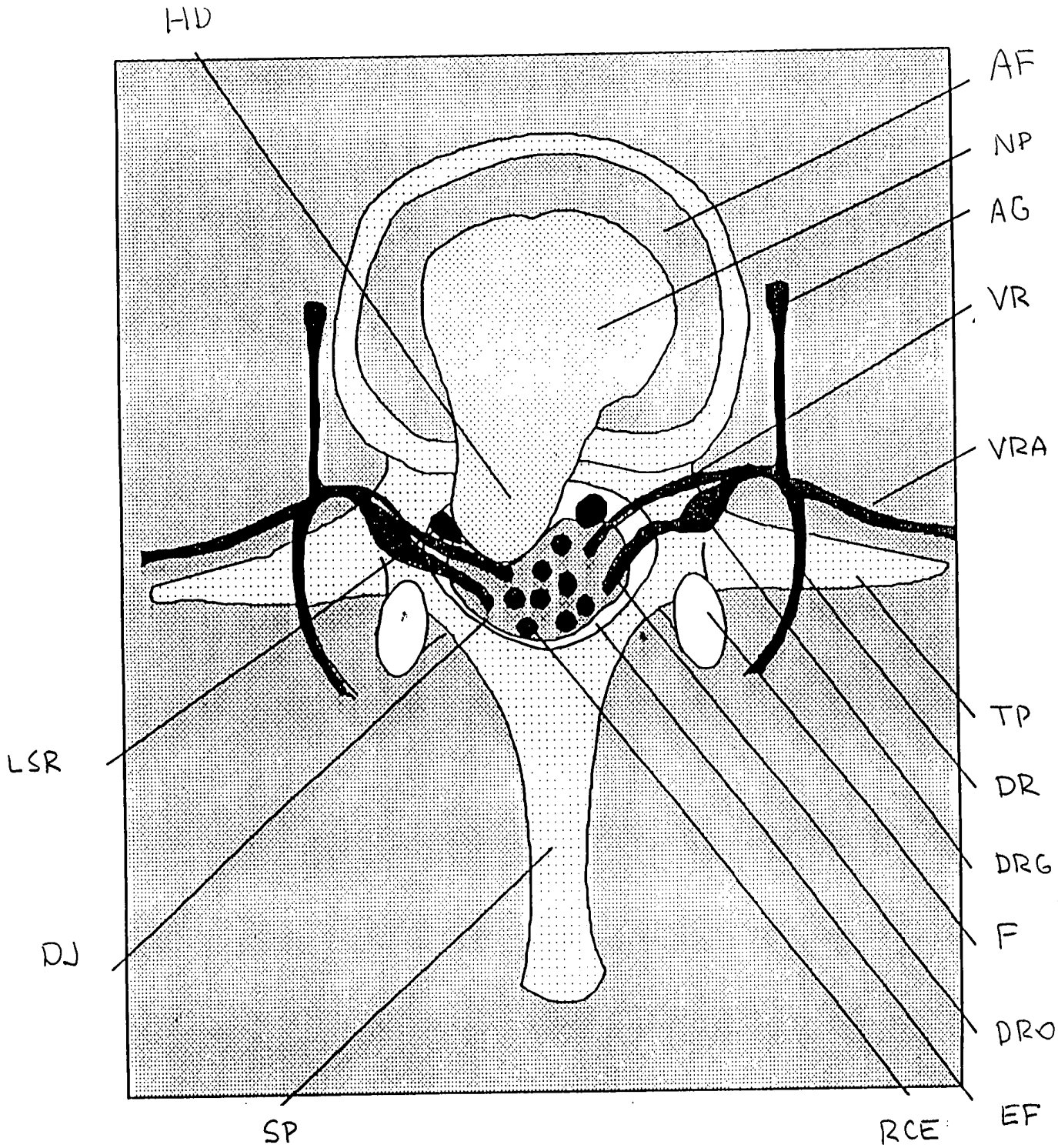

FIGURE 23

08/028795

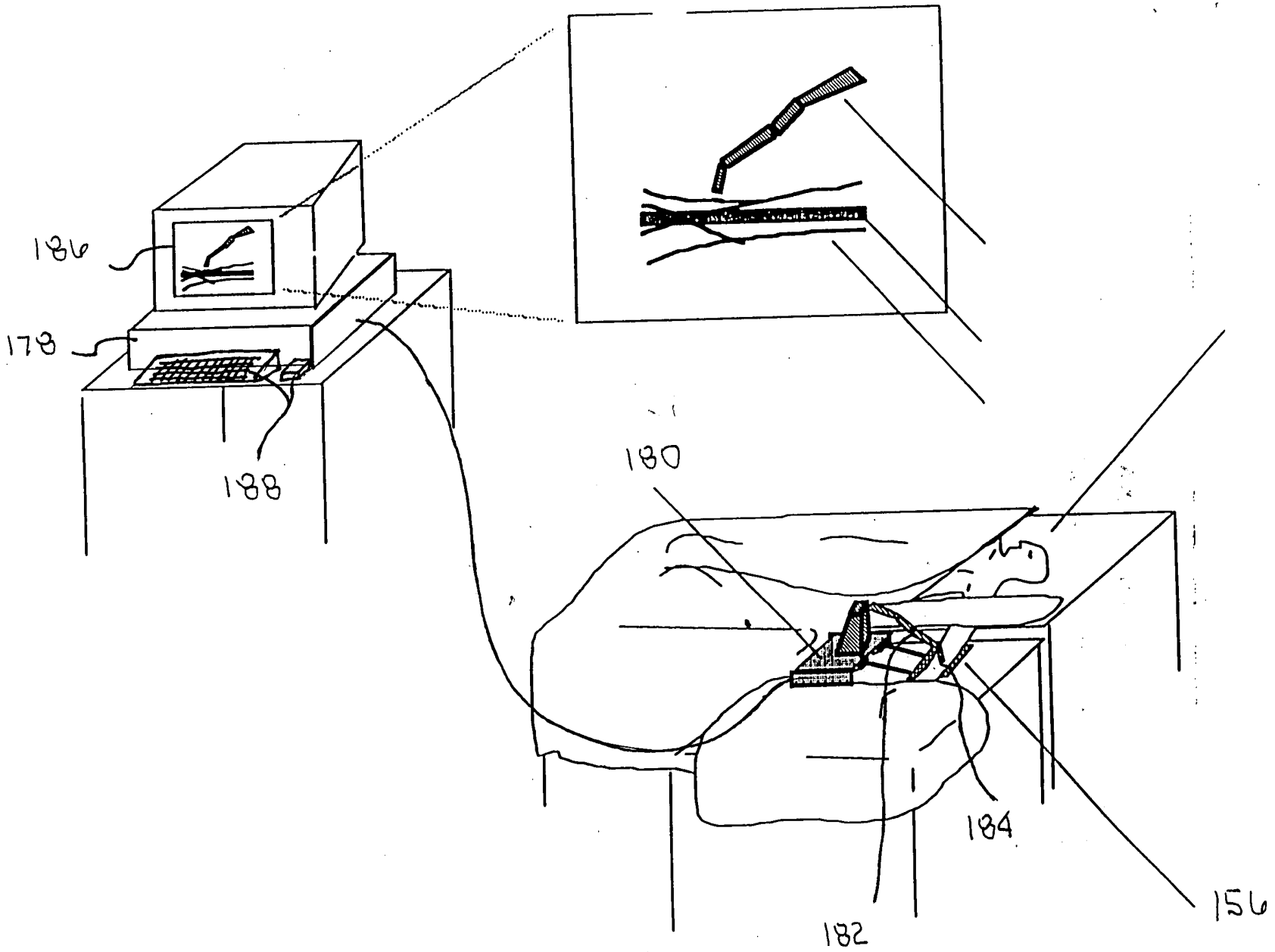

FIGURE 24

08/028795

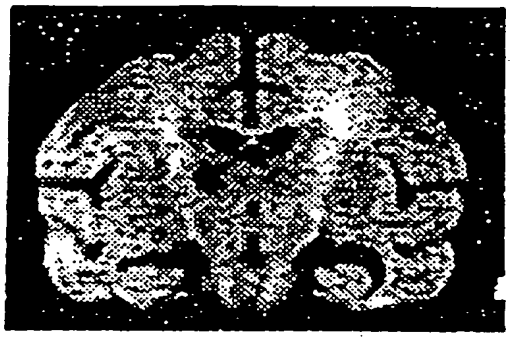

FIGURE 16

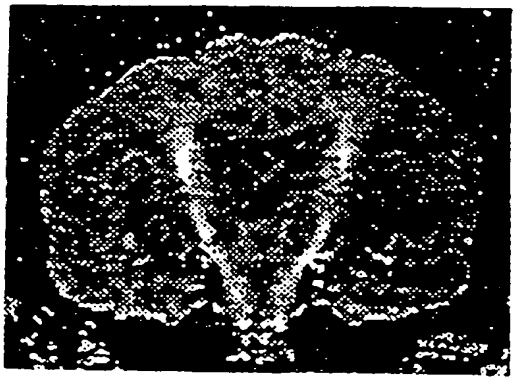

FIGURE 17

Subtracted Diffusion Images

G=0

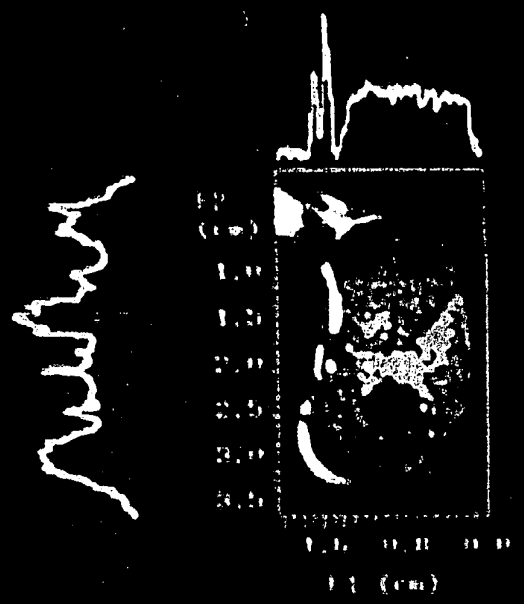

FIGURE 15A

7 G/cm⊥

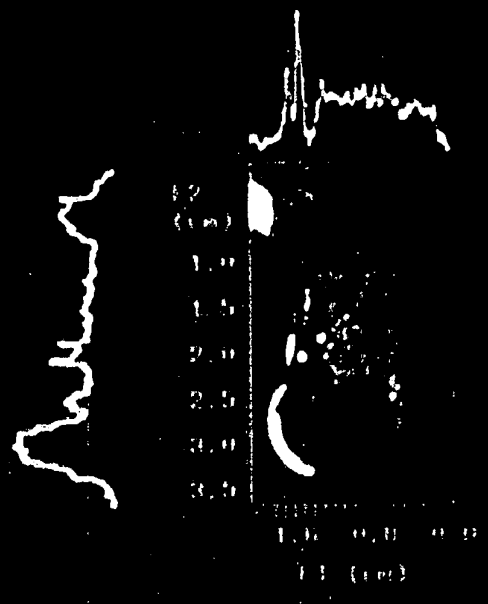

FIGURE 15B

7 G/cm //

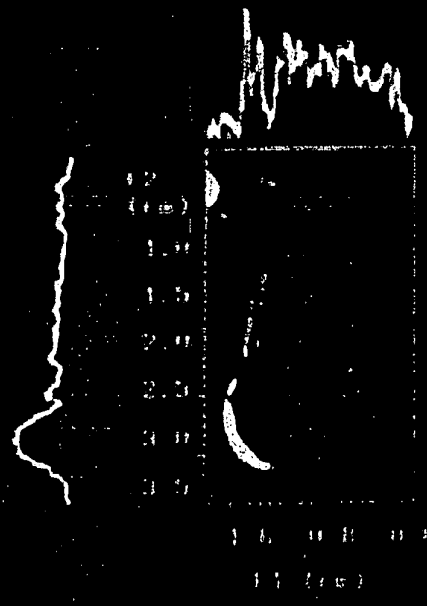

FIGURE 15C

Subtraction
⊥ - //

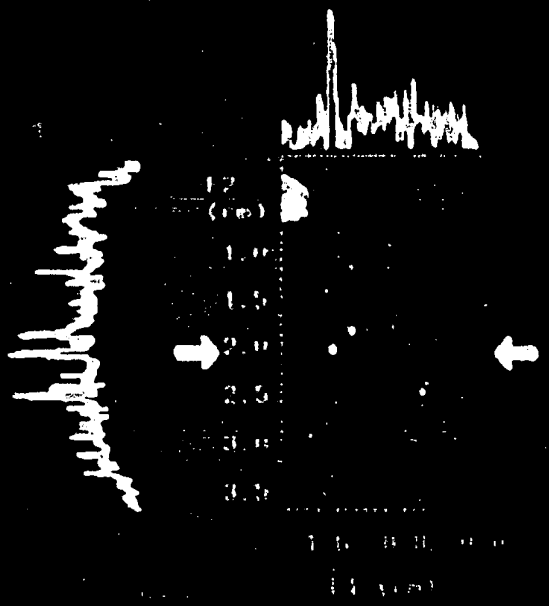

FIGURE 15D

08/028795

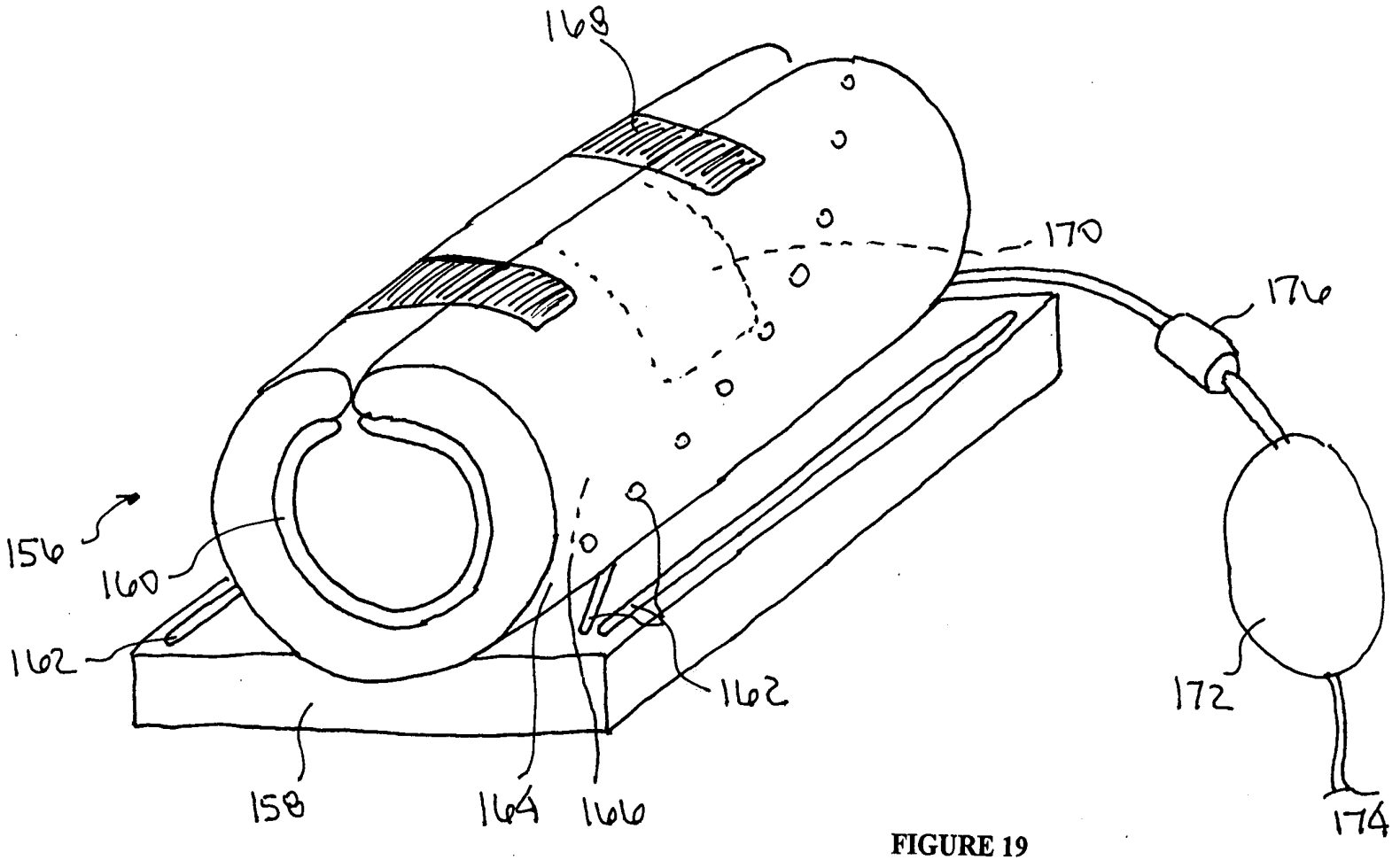

FIGURE 19

08/028795